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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/686,895	10/12/2000	Ting Kuo Chen	MR1035-777	5392

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ROSENBERG, KLEIN & LEE
3458 ELLICOTT CENTER DRIVE-SUITE 101
ELLICOTT CITY, MD 21043

EXAMINER

VON BUHR, MARIA N

ART UNIT	PAPER NUMBER
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2125

DATE MAILED: 03/16/2004

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/686,895

Applicant(s)

CHEN ET AL.

Examiner

Maria N. Von Buhr

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-13 are pending in this application.
2. The specification is objected to because it is inconsistent. The disclosure must be amended, when required by the Office, to correct inaccuracies of description and definition, and to secure substantial correspondence between the claims, the remainder of the specification, and the drawings. See 37 CFR §1.121(e). In this regard, any and all references to "burglary," in the specification and the drawings, must be removed from the application, since they are irrelevant to the instant claims. Furthermore, the first instance of any abbreviations/acronyms, within the specification and within the claims, require a definition of such.
3. The drawings are objected to because of the presence of misspellings on each figure, and because confusion is introduced in Figures 3 and 4 by the designation by both the "ON" and "OFF" states of the of the storing instruction as indicating that a wafer enters the polishing apparatus. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
4. Claims 1-13 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In claim 1, there is no clear and proper antecedent basis, and/or no clear metes and bounds, for "the circumstances when wafers are polished," "the image signals photographed by said photographing devices," "the images captured at the same time," "the same image frame," "the image signal transferred from said multiple-image receiver," "said PC," "the signal when a wafer enters or leaves the polishing apparatus," "the polishing apparatus" nor "the signal of wafer fragmentation from a signal-transmitting device."

In claim 4, there is no clear and proper antecedent basis, and/or no clear metes and bounds, for "the status of an image-capturing system," "the process," "the polishing work of the whole batch of wafers" nor "the whole batch of wafers." Also, it unclear how Step (6) can be performed, when no

data exists in Image(2), since the only step involving Image(2) was Step (1), which cleared all the image files. Additionally, each of the period punctuation marks that follow the step numbers need to be deleted. The only period punctuation mark that should be evident in the claims is the concluding one.

In claim 5, there is no clear and proper antecedent basis for "said photographing device," since a plurality have previously been introduced.

In claim 9, there is no clear and proper antecedent basis, nor clear metes and bounds, for "the circumstances." Also, the phrase "technicians can examine" is deemed vague and indefinite, since it is not a positive recitation of function.

In claim 11, there is no clear and proper antecedent basis, and/or no clear metes and bounds, for "the images captured at the same time," "the same image frame," "the state of the store instruction," "the store instruction" nor "the captured image," since a plurality have previously been introduced." Also, each of the period punctuation marks that follow the step numbers need to be deleted. The only period punctuation mark that should be evident in the claims is the concluding one.

In claim 13, there is no clear and proper antecedent basis, nor clear metes and bounds, for "the functional circuits." Also, it is unclear whether this claim is a method or apparatus claim, which presents ambiguity with regard to its metes and bounds, as a whole. It appears to be an improper hybrid claim, and improperly dependent upon claim 11.

The remainder of the claims stand rejected as incorporating the above-noted ambiguities of their parent claims.

5. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 11-13 are rejected under 35 U.S.C. §103(a) as being unpatentable over Smargiassi et al. (WO 00/22655) in view of Dillen et al. (U.S. Patent No. 6,265,736).

Smargiassi et al. disclose a system for detecting wafer fragments during a wafer manufacturing process, wherein "as image acquisition device acquires an image of a wafer. A processor analyses the acquired image to determine whether a wafer fragment is present ... Detection of a wafer fragment allows the ... process to be stopped so that the fragment can be cleared away" (see, at least, the abstract; and pages 3-5, 10-14 and 17-18), the cameras for taking the images being taught as being of the CCD type.

However, Smargiassi et al. do not teach using a plurality of cameras, and merging the images in order to create the whole image for analysis. In this regard, Dillen et al. disclose an "image pick-up apparatus" utilizing CCD image sensors, wherein "an image is composed from the images supplied by the various image sensors" (see, at least, the abstract). It would have been obvious, to one having ordinary skill in the art, at the time the invention was made, to modify the teaching of Smargiassi et al. to include such plural image sensors, and merging of images created thereby, since Dillen et al. teach the benefit of being able to adjust the spatial resolution of the images (see, at least, cols. 1-5).

7. Claims 4-10 are rejected under 35 U.S.C. §103(a) as being unpatentable over Smargiassi et al. (WO 00/22655) in view of Dillen et al. (U.S. Patent No. 6,265,736), similarly as applied above to claims 1-3 and 11-13, further in view of Johnson et al. (U.S. Patent No. 6,163,338).

Neither Smargiassi et al. nor Dillen et al. disclose the instantly claimed steps of storing the images in a recirculating memory, wherein the recirculating of the memory is stopped in response to an indication that a wafer fragment has been detected. In this regard, Johnson et al. teach an "apparatus and method for providing a video or audio record of a predetermined activity close in time to a preselected triggering event comprising a video or audio detection apparatus, control circuitry for developing a stream of electronic data representing a continuous sequence of audio or video images in real time, a circular data storage buffer for receiving the data in real time, an event detection mechanism for sensing occurrence of the predetermined triggering event so as to cause the control circuitry to freeze the contents of the circular buffer at some time adjacent to the occurrence of the triggering event, and means for downloading the stored data to a means for perceiving it such as a

personal computer" (see, at least, the abstract). It would have been obvious, to one having ordinary skill in the art, at the time the invention was made, to modify the teachings of Smargiassi et al. and Dillen et al. to include such a recirculating memory, because Johnson et la. teach a resultant conservation of memory space.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Applicant is advised to carefully review the cite documents in preparation for responding to this Office action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria N. Von Buhr whose telephone number is 703-305-3837. The examiner can normally be reached on M-F (9am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 703-308-0538. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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